

Introduction to Artificial Intelligence

CS 156

Fall 2026 Section 01 In Person 3 Unit(s) 08/19/2026 to 12/07/2026 Modified 08/14/2026

Contact Information

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Office Hours: DH282 Tue 12:00- 1:00pm (please email before)

Course Information

This is an in-person class.

Class Meets: DH450 Tue, Th 10:30-11:45am

Course Description and Requisites

Basic concepts and techniques of artificial intelligence: problem solving, search, deduction, intelligent agents, knowledge representation. Topics chosen from logic programming, game playing, planning, machine learning, natural language, neural nets, robotics.

Prerequisite(s): CS 146 (with a grade of "C-" or better); Allowed Majors: Computer Science, Data Science, Computer Science and Linguistics, Applied and Computational Mathematics or Software Engineering; or instructor consent.

Grading: Letter Graded

Cross-listed with SE 156. Computer Science is responsible for scheduling.

Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Learning Outcomes (CLOs)

By the end of this course, a student should be able to:

CLO1 -- Recognize tasks and apply the right set of tools to solve them.

CLO2 -- Find solution nodes in a state space using the A* algorithm.

CLO3 -- Explain the advantages and disadvantages of the following techniques:

- (a) breadth-first search compared to depth-first search,
- (b) informed search compared to uninformed search,
- (c) Hill climbing, gradient ascent

CLO4 -- Apply forward checking and AC3 in constraint satisfaction problems.

CLO5 -- Apply alpha-beta pruning in adversarial search.

CLO6 -- Understand MDP and reinforcement Learning. Be able to formulate Q learning

CLO7 -- Understand what machine learning is and the types of machine learning algorithms

CLO8 -- Implement at least one machine learning algorithm.

Course Materials

Required Texts: Artificial Intelligence: A Modern Approach. 4th Ed.. Stuart Russell and Peter Norvig

Online References and Other Links: <https://inst.eecs.berkeley.edu/~cs188/textbook/>

Course Requirements and Assignments

We will have homework assignments, weekly in-class quizzes and exercises.

There will be ~6 homework assignments, roughly every 2 weeks, except around exams. They are expected to be returned in time. A delay of up to a week results in a 10% penalty and up to 2 weeks 20%. After that the grade on that assignment will be 0.

For homework you are encouraged to work in groups of two people. Each member of this group needs to submit the homework assignment and the members of the group need to be clearly identified in all submitted files. Material from assignments may appear on midterms and finals.

There will be a weekly in-class quiz or exercise on the previous week's material. The answer to the quiz will either be multiple choice, true-false, or a simple numeric answer. Each quiz is worth a maximum of 1 or 2pts with no partial credit being given. These points are bonus points that will be added to the midterm and final exams grades, not to exceed 50% of the difference between the combined exam grade and 100%. \

Students of this class will be held at the highest standard of ethics. Cheating will be sanctioned following the university policies and procedures. Cheating will result in a Referral to the Office of Student Conduct and Ethical Development and appropriate sanctions.

✓ Grading Information

HW	40%
Midterm	30%
Final	30%
Total	100%

Determination of Grades

Nominal Grading Scale (after any curve adjustment)

Percentage	Grade
97 – 100	A+
93 – 96	A
90 – 92	A-
87 – 89	B+
83 – 86	B
80 – 82	B-
77– 79	C+
73 – 76	C
70 – 72	C-
67 – 69	D+
63 – 66	D
60 – 62	D-
0-59	F

Per [University Policy S16-9 \(PDF\)](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the [Syllabus Information](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>) web page. Make sure to visit this page to review and be aware of these university policies and resources.

 Course Schedule

Course Content and Schedule

Course Schedule (subject to change)

Date	Day	Topic
8/20/26	Th	Overview - What is AI
8/25/26	Tue	Intelligent Agents
8/27/26	Th	Uninformed Search
9/1/26	Tue	Informed Search
9/3/27	Th	Informed Search cont.
9/8/26	Tue	Search in Complex Environments
9/10/26	Th	Gradients
9/15/26	Tue	Constraint Satisfaction Problems
9/17/26	Th	CSP Continued
9/22/26	Tue	Adversarial Search and Games
9/24/26	Th	Adversarial Search cont.
9/29/26	Tue	Uncertainty
10/1/26	Th	Naïve Bayes
10/6/26	Tue	Bayes Nets
10/8/26	Th	Bayes Net Inference
10/13/26	Tue	Review for midterm
10/15/26	Th	Midterm
10/20/26	Tue	MDPs
10/22/26	Th	RL

10/27/26	Tue	Unsupervised learning: KMC
10/29/26	Th	Supervised Learning - KNN
11/3/26	Tue	Linear modeling
11/5/26	Th	Neural Networks
11/10/26	Tue	Training and Metrics
11/12/26	Th	Neural Networks in Practice
11/17/26	Tue	CNN
11/19/26	Th	Computer Vision applications
11/24/26	Tue	NLP Models
11/26/26	Th	Thanksgiving Holiday
12/1/26	Tue	Ethics in AI
12/3/26	Th	Review for Final Exam
12/8/26	Tue	Study Day - No exams
12/10/26	Th	Final Exam